

# Green Roof Incentives + Partnerships – The 2010 Resource Guide

## Slide 1: Title Slide

Neelam Patel: I'd like to go ahead and introduce our next speaker. At this point, you've heard about the science and some of the many benefits of green roofs and factors that need to be considered if you are interested in implementing green roofs. So, what we'd like to do is transition into implementation from an incentive perspective.

Today, we have Sara Loveland on the call with us. She is a board member of D.C. Greenworks and will cover some of their interesting projects and work that's coming out of this nonprofit organization, D.C. Greenworks. Recently, she has been involved in organizing the regional green roof meeting that was held last week here in Washington D.C. There were several hundred attendees that were interested in learning more about green roofs from the industry side and the implementation side. So we're going to ask Sara here to talk about some of the work that D.C. Greenworks has accomplished recently. Sara?

Sara Loveland: Thank you. I'm really excited to be here today and also to see that we have over 200 people on the line, so I think that's a really great turnout and I'm happy to see so much interest. So we have a lot of information to cover in a very short time and I'm going to move quickly through it.

## Slide 2: Our Mission

Sara Loveland: At D.C. Greenworks, our mission is to grow livable communities using living materials so you can see that that's quite broad.

## Slide 3: Our Business Model: The results of a business with the heart of a non-profit.

Sara Loveland: Under that umbrella, we do a number of different things and that includes consultation, installation, advocacy, training and research. And you're really going to hear about the installation and sort of consultation as well as the research today.

## Slide 4: DC Greenworks Government Partnerships

Sara Loveland: Now, one of our interesting partnerships with the government of the District of Columbia is the Washington D.C. Green Roof Pilot Subsidy Program. So in the district, the D.C. government doesn't administer these programs directly, so they have NGO partners to do that for them. We originated the Pilot Subsidy Program in 2007 and it provided for \$3 per square foot for every green roof installed.

And there was an approval committee and a rating system because originally, we thought there was going to be very fierce competition and so we wanted to promote, you know, sort of the best projects, demonstration projects and public access and things. As we realized that the industry

was shifting and the demand was different than we thought, we evolved the program. It now provides for \$5 per square foot of green roof installed, and it has a much more prescriptive criterion, so 50 percent coverage of usable roof space.

Now interesting thing to note here, because many legislators across the country are struggling with what percentage they'd like to incentivize, is that we're looking at 50 percent of usable roof space, which excludes any HVAC equipment on the roof and also any skylights. So you could do anything around with – excluding those square footage. And then it also prescribes three inches of growing medium depth.

#### Slide 5: DC Greenworks Government Partnerships

Sara Loveland: Another one of our great government partnerships was funded by the Office of the Deputy Mayor for Planning and Economic Development. This is a very targeted sort of eco-district program and it's called, "Green Roofs for Environmental and Economic Revitalization." As you can see, we've gotten that into a real cute acronym. But the main goal is to target a revitalizing commercial quarter in the city where there are a lot of buildings that have long been neglected, and that are undergoing renovation at a very rapid pace right now. So we want to make sure to incentivize them as much as possible where we have an opportunity to get, you know, almost a greenway through the middle of the city with some really great linkages to other natural resources.

So for that, we're providing \$9 per square foot. And again, because these funds don't come from the same pot of money as the district department environment funds, the clients can use both of them, so you've got your \$9 per square foot plus a \$5 per square foot. And then this grant also provides for D.C. Greenworks to manage and to design, and manage and build the project with volunteers for the community so that's how we sort of leverage our funds and make sure that we can get people who are interested on the roof and get them some training, and then also provide all these services that are really low-cost for the building owner. This project was funded last year and we're still working on sewing up all the available funding for it.

#### Slide 6: The 2010 Resource Guide

Sara Loveland: So the next thing that I'll talk about today is the 2010 resource guide. This is – was compiled over the course of 2009, so the data is current through September 2009. It was funded by the Chesapeake Bay Small Watershed Grants from the National Fish and Wildlife Foundation and the goal was to get a snapshot of what's going on in the industry, what different incentive programs people are offering, and hopefully, make some recommendations based on what we see is working and, you know, what we see being implemented on a wider scale. So a best practices paper in short.

#### Slide 7: The Need

Sara Loveland: A lot of people have gone over the need for these different incentivized programs, but I do feel it's important to throw out these numbers that we're looking at. Forty million people are living in 32 states, including the District of Columbia, and 746 cities that have

combined sewer systems. And you can see these numbers here which are just staggering, that amounts in over 9,000 outfalls which dump 850 billion gallons of untreated sanitary sewage into our waterways every year. And there – you can obviously see the also staggering numbers of how much it's going to cost to remediate that.

#### Slide 8: The Need

Sara Loveland: Now, the other thing that's interesting to note is that all of these cities and private entities as well have violated the Clean Water Act over 500,000 times since 2004 and fewer than 3 percent of these violations resulted in penalties. So I think that the EPA is really stepping up on enforcing a lot of these as a regulator, but it's important to talk about the incentives as well, which is why we're here today.

#### Slide 9: Top Ten Metropolitan Area List by Square Footage of Green Roof Infrastructure Installed, 2008

Sara Loveland: So these are the leaders as you look across the metropolitan areas. I'm sure many – metropolitan areas in the United States, I'm sure many of you have seen these. So Washington D.C. always comes second to Chicago, we just can't seem to get up there and those are fighting words for our part, because in D.C., we hope that next year we'll be number one.

#### Slide 10: Green Roof Incentives in the United States

Sara Loveland: So here's what we looked at. We did sort of a survey based on an AIA study that was conducted in, let's see, 2009 and we got a list of all of the different public policies that incentivize green buildings. So some of these are specifically green roofs and some of them are green building as classified by the U.S. Green Building Council, which, of course, is the most popular legislative mechanism for Green Building Acts in cities. And so it's really interesting, I think, to take a look at where these incentives fall and there are quite a number of incentives as you see indicated by the dark green. And then a lot of major metro area incentives as indicated by the larger green dots.

#### Slide 11: population of United States municipalities with green roof incentives

Sara Loveland: Now, here's another interesting point. The population of the United States that is covered by these regulations is really quite large. So using 2008 estimated populations, there were jurisdictions of anywhere from 13,000 people to over 8 million people who took the opportunity to implement Greenworks' incentives of some type. And this is land area ranging from 2.2 miles to over 2,000 miles, but I think the really astounding number here is that 42 – almost 42 and a half million Americans live in cities that support green buildings and 38 million live in cities that have implemented incentives to expand green roof and green building technologies that does not include state-incentive programs.

So, if your city is not one of the numbers, keep in mind that these programs, hopefully, will be coming to you and hopefully, you'll be bringing them to your populations, because it is growing now. I always like to give a shout out to Eagle County, Colorado, which was one of the

jurisdictions of just a few thousand people who took it upon themselves to enact very progressive legislation.

#### Slide 12: Incentive Implementation by Region

Sara Loveland: So, here's what the incentive implementation looks like by region, and I think probably not very many of you will find this surprising that the west, where there are water shortages, and the northeast where there is extreme pollution are the leaders impacting this policy. There's not very much going on in the southwest. We do see a lot of growth in the southeast as well, and you can see this on the next slide where you look at the number of policies implemented by year.

#### Slide 13: Year of US green roof incentive implementation

Sara Loveland: So, 1996 wasn't a very big year. In '97, there was nothing going on. And then, you see the numbers start to peak in 2004, was when it really built to that sort of critical mass where you see every year we've got new direct and indirect and also some intangible incentives introduced.

#### Slide 14: Incentive Options

Sara Loveland: And I'll explain to you how we divide those up here. So, we have direct monetary inducements, I think you guys are familiar with some of these if not in green building in other areas of policy, grants, tax credits, tax abatements, other loan formats. Then there are indirect financial incentives and this includes things like fee reductions and storm-water utility fee credits. And then we covered intangible incentives, so this is alternative density bonuses, fast-track permitting, awards and expedited utility hook up, or things like that that help you get your project done more quickly, and allow you to build more usable space and more – add more value to your building.

I mean, and there's also, of course, the stick to counteract the carrot, so there are definitely – there's definitely legislation being enacted as well, but again, we're going to stay on the carrot today. And also, you know, I'd to take this opportunity, before I get into a little bit about each of these categories, to remind you that at the end of this presentation, I'll show a slide with a link to the D.C. Greenworks website where you can download the full White Paper. It's 45 pages, so obviously, more than I can cover in 15 minutes. And I strongly urge all of you to go and to download the White Paper, and just share it with other policy makers.

#### Slide 15: Direct financial incentives – Tax Incentives

Sara Loveland: So, the first of our direct financial incentives are tax incentives. There are 15 green building and two green roof specific tax credit or abatement programs around the country in the bills that we've highlighted here, New York City and Philadelphia. New York City provides one-year tax abatement for at least 50 percent coverage.

This program is a little bit slower getting up and going, they've only had five applications so far, and a lot of this is for people who are using public space, other BMPs, and not necessarily green roof. And as far as I know, after the close of this study, there was one application that went through for a green roof in late fall of 2010. If anybody is on the line who's from New York and you have more current numbers, that would be awesome if you'd share.

And then, in Philadelphia, we also have tax credits for the lesser of 25 percent of project costs or \$100,000 against the Business Privilege Tax. This program also has only had one applicant, so it's just getting going.

#### Slide 16: Direct financial incentives – Grant Programs

Sara Loveland: And we have grant programs. There are 17 programs that fall under, you know, one of four structures. So a lump sum per project, this is where you would say, "We'll give you \$5,000 if you build a green roof," and that's basically as specific as it gets. There is an amount per square foot with or without a project limit. That seems to be one of the most popular programs that we're seeing right now because it just seems very static. So you can sort of prescribe some of the things that I covered with the Washington, D.C. subsidy. A certain number of dollars per square foot, you'd like a certain amount of coverage, and you expect a certain amount of soil depth as well.

And another way to incentivize along those same parameters would be to use a percentage of the total project cost. So if you have really good data about average cost by building type for your city, you could target specific building owner constituencies using these percentage costs to figure out how you get to – the number that we like to see is usually 25 to 30 percent of the project cost to really make it worth their while, to truly incentivize.

And then you see them as an element of a larger grant program. So I talked about our greeNER Program in Washington D.C. Also Portland, Oregon has a Community Watershed Stewardship Grant that can be combined with other grants. And so you can leverage a lot of grant programs with each other. And we hope, of course, that you'll also do that with community involvement and, you know, private donations and building owner contributions as well.

#### Slide 17: Direct financial incentives - Loans

Sara Loveland: There are nine loan programs available right now, most of which focus on energy efficiency but will fund the green roof. Two of them are green roof specific. So the Bronx Environmental Revolving Loan Fund is one of the most frequently highlighted. So it's a low-interest loan, it started in 2006. And there are really capable terms for this. \$100,000 is the maximum loan and the interest rate is one to three percent. And I don't know how many of you have been looking at loans recently, but a one to three percent interest rate is virtually impossible to find. So this has funded 13 green roofs and approximately 40,000 square feet of vegetative space.

Now, another note that wasn't included in the study but that we've seen some tremendous movement on in the past year are Property Assessed Clean Energy financing programs. Now,

these use your property tax assessment, and so they add the loan to the value of the building and it is transferred with the ownership of the building rather than with the loan. So it comes on your tax bill is how you pay this. Really interesting programs, we have one most recently enacted in Washington D.C. several months ago. Annapolis, Maryland enacted one. It's also very popular in jurisdictions across the West Coast right now.

#### Slide 18: Indirect financial incentives

Sara Loveland: Also indirect financial incentives, so here, we're going to see things like reduced fees for Green Building permits. Or, let's say, if you have a green building fund as in Arlington County, which is a suburb of Washington D.C., while you're building your project, you contribute 4.5 cents per square foot to a green building fund. If you achieve your LEED certification, you're refunded that money. If you don't, that money stays in the fund and can be used for other projects.

In Minneapolis, property owners can apply for a credit of up to 50 percent of their stormwater utility fee if they're using best management practices and can also apply for credit for quantity measures, so that includes green roofs as well.

#### Slide 19: Intangible incentives

Sara Loveland: Other intangible incentives – 13 Density Bonus Programs, I think this really speaks to the value of real estate in the urban cores – a lot of people just want to build more space. If you tell them they can do that when they do a green roof, it's going to be a very popular program. And Fast Track Permitting is also a very popular program. 20 Fast Track Permitting or Priority Permitting Programs are implemented across the United States.

So none focused specifically on green roofs, but if you are applying for a permit for a green roof or your green roof is a component of a green building, then you're going to realize those benefits as well. Now, I've heard mixed reviews from jurisdictions across the country. Some people are saying, "Yes, our green building permit expediting program is working." And some people say, "No, you know, we haven't really seen it working yet. It's more an exercise in theory." So also, you know, if any of you'd like to contact me, I'd love to hear feedback about the efficacy of these programs in your jurisdiction.

#### Slide 20: Impervious Surface Fees

Sara Loveland: I just have a couple of notes about impervious surface fee logistics for a minute. If you don't have impervious surface fees in your jurisdiction, you should be asking for them. This is the polluter pays model. So, in most cities, we've been paying for our stormwater runoff by our water consumption, which means that a Wal-Mart with a large parking lot that doesn't use a lot of water is going to have a very low stormwater utility bill. But we want them to have stormwater utility bill that's related to the amount of impervious surface they have as you can see - as indicated by this map here.

#### Slide 21: Impervious Surface Fees

Sara Loveland: So this is what we've done in DC. We have an Equivalent Residential Unit that makes it very easy to quantify across just residential – the typical, sort of residential lot for the city – this city's building stock. Now, the interesting thing here is that those charges are very affordable but they are projected to escalate so this is sort of typical of these programs where you see a small and more affordable fee but there will be fee increases every year. So, 6.9 million annually in fees is nothing – it's a drop in the bucket. We need to fund a 2.2 billion dollar stormwater diversion tunnel; we're also funding ongoing green infrastructure projects. So, it would take 318 years to pay for the tunnels if we just use those fees at the current rate. So, you really have to think about the true cost of your stormwater management. You know, we want to make sure the user pays, or sorry, the polluter pays, and also that the user's paying what the actual cost of the treatment is.

#### Slide 22: Recommendations

Sara Loveland: So out of the paper, we came up with a set of about 10 very general recommendations for – to help you along the way, again, I can't say enough. Please read the White Paper. There are a lot of really valuable insights there where, you know, we talk about how you can do some of these things. But, I'd like to definitely call out that you should conduct some research about the baseline of green roof interest and understanding. Do people in your jurisdiction even know what's going on?

Demonstration projects are hugely important. I think most cities have these now, but doing case studies that come out of those and continuing ongoing research on the performance of those is also very important, and a lot of times, that funding gets value engineered out of the demonstration project without significant public funding.

Also you're going to want to look at formalizing green roof incentive administration and this basically means: appoint a technical assistant supervisor, appoint a green roof specialist position. These people should be, you know, a very easy and approachable point of contact for building owners who are still trying to find their way through learning about green roofs and what it means for their building. Let's make this simple for them. Let's not make it too hard for them to have access to the information they need.

And then continuing to cultivate a culture of urban environmental awareness. This is hugely important and it seems basic thing but, you know, a lot of times our messaging as government entities, or even as private entities, isn't effectively conveying how important these issues are to people in the city.

#### Slide 23: Increase education and outreach of the green roof technology and sustainable green building

Sara Loveland: So, these are some of the tools that you can use to increase the education and outreach. And, we want to see toolkits. We definitely want to see those toolkits on websites. We want all of this information free and easy and accessible. If your jurisdiction doesn't have them yet, again, please refer to the White Paper, but find another jurisdiction that has good toolkits and

great websites for resources and, you know, refer people there. And definitely, you know, waste no time in creating your own.

Also the Green Roof Professional Accreditation from Green Roofs for Healthy Cities, I think, has gone a long way to starting to establish some standard within the marketplace about what the design criteria are and who's really qualified to be up on the roof. Green technology centers and research centers are hugely important to maintaining – you know, you can go on research from another region, but it's not necessarily going to be indicative of the performance benefits and the results of projects in your area, so you want to make sure you start getting that data as soon as possible.

#### Slide 24: Recommendations – The big three

Sara Loveland: Then the big three recommendations that came out of it. We'd like to see an energy star rating for green roofs. We kind of think that, you know if the EPA were to fund at 30 percent, the cost the green roof similar to, you know, what we would do for solar panels or for white roofs, that that would be a great starting point.

We'd also like to see more funding for eco-districts especially in revitalizing neighborhoods or areas where environmental justice has frequently been a concern. We'd like to see a focus on the commercial district and high traffic areas where you'll really reach a lot of the population, and educate them through even just their presence in these areas, but also getting them involved and getting them, of course, as DC Greenworks motto would be, to have the community involved in implementing the projects and taking ownership.

And then we'd also like to see green roof-ready construction. Sort of the example here is in Colorado. There's some recent legislation that mandates that new construction be solar panel ready. So, while you may not have solar panels on them, you – it should be easy for anyone who buys one of these homes to install solar panels. We'd like to see the same thing be implemented for – and this would be enacted as legislation – for building codes that would support, you know, 35 pounds per square foot or depending on the snow load in your area, you know, what the total arrives at. But at least another 35 pounds per square foot for load so that even if the current building owner didn't want to do a green roof, it wouldn't be a massive and very expensive, and prohibitive retrofit project for the next building owner to undertake that.

#### Slide 25: What you can do now:

Sara Loveland: So the call to arms – what we'd like to see you do – any of these certified things. You can install a green roof, if you can't do one yourself, volunteer with the Stormwater group or support businesses that are water conscious. They don't necessarily have to have a green roof. We understand not everybody can do them right now, but learn what water conscious means for different types of businesses and support those who are conscientious. Also urge your legislator to pass supporting policies. It's hugely important. Supporting research in your community, make sure that you know who's doing good research. And, you know, find out how you can help them or how you can leverage their research and build off of it.



Slide 26: Where you can find us:

Sara Loveland: Sorry, I'll go back to the last slide. So here's information about where you can find the resource guide. Do you see [greenworks.org](http://greenworks.org)? It's pretty easy to remember. You can also contact us by phone; you can just show up at our office. The picture at left is one of our greeNEr test spots and we are located next to Atlas Theater in beautiful 8th Street, Northeast corridor.

You can also feel free to reach me via email, [sara@dcgreenworks.org](mailto:sara@dcgreenworks.org). And if anybody has any questions in the question and answer session, I'll look forward to helping out.

Neelam Patel: Great. Thank you Sara. I'd like to move to Michael Berkshire from the City of Chicago and continue on this implementation theme and thinking about what you need to do if you were to implement Green Roofs in your neighborhood; what you need to consider. And what we'll be hearing from Michael is actually the work that Chicago has already accomplished. Like Sara mentioned, Chicago is a leader, sounds like there's some competition between D.C. and Chicago for this leadership role.